

1 **BELLSOUTH TELECOMMUNICATIONS, INC.**
2 **DIRECT TESTIMONY OF ERIC FOGLE**
3 **BEFORE THE TENNESSEE REGULATORY AUTHORITY**
4 **DOCKET NO. 04-00381**
5 **JULY 26, 2005**
6

7 Q. PLEASE STATE YOUR NAME, YOUR POSITION WITH BELLSOUTH
8 TELECOMMUNICATIONS, INC. ("BELLSOUTH"), AND YOUR BUSINESS
9 ADDRESS.

10
11 A. My name is Eric Fogle. I am employed by BellSouth Resources, Inc., as a
12 Director in BellSouth's Interconnection Operations Organization. My business
13 address is 675 West Peachtree Street, Atlanta, Georgia 30375.

14
15 Q. PLEASE PROVIDE A BRIEF DESCRIPTION OF YOUR BACKGROUND
16 AND EXPERIENCE.

17
18 A. I attended the University of Missouri in Columbia, where I earned a Master of
19 Science in Electrical Engineering Degree in 1993 and Emory University in
20 Atlanta, where I earned a Master of Business Administration degree in 1996.
21 After graduation from the University of Missouri in Columbia, I began
22 employment with AT&T as a Network Engineer, and joined BellSouth in early
23 1998 as a Business Development Analyst in the Product Commercialization Unit.
24 From July 2000 through May 2003, I led the Wholesale Broadband Marketing
25 group within BellSouth. I assumed my current position in June 2003. First, as a

1 Business Analyst, and then as the Director of the Wholesale Broadband
2 Marketing Group and continuing in my current position, I have been, and
3 continue to be, actively involved in the evolution and growth of BellSouth's
4 network including provisions for accommodating Digital Subscriber Line
5 ("DSL") based services as well as the underlying technology.

6

7 In addition to my involvement in broadband technology and product
8 development, I am also actively involved with BellSouth's wholesale business
9 and have participated in the development of BellSouth's position prior to
10 negotiations in interconnection agreements, including developing contract
11 language and negotiating change of law provisions.

12

13 Q. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

14

15 A. The purpose of my testimony is to provide BellSouth's position on Issues 6, 17,
16 18, 19, 20, 23, 24, 25, 26, 27, and 28. These issues are summarized in the July
17 21,2005, Joint Issues Matrix filed with the Tennessee Regulatory Authority
18 ("Authority").

19

20 Q. DO YOU HAVE ANY PRELIMINARY COMMENTS?

21

22 A. Yes. There are numerous unresolved issues in this docket that have underlying
23 legal arguments. Because I am not an attorney, I am not offering a legal opinion
24 on these issues. I respond to these issues purely from a policy or technical
25 perspective. BellSouth's attorneys will address issues requiring legal argument.

1 *Issue 6: Are HDSL-capable copper loops the equivalent of DS1 loops for the purpose*
2 *of evaluating impairment?*

3
4 Q. WHAT IS BELLSOUTH'S POSITION ON THIS ISSUE?

5
6 A. BellSouth has outlined its legal position on this issue in its June 1, 2005, Motion
7 for Summary Judgment filed with the Authority. As a practical matter, however,
8 this should not be a contentious issue between the parties because BellSouth
9 counted Unbundled Network Element ("UNE") High-bit rate Digital Subscriber
10 Loop ("HDSL") capable copper loops on a one-for-one basis, and did not convert
11 each HDSL capable loop to voice grade equivalents. Thus, the Competitive Local
12 Exchange Carriers' ("CLECs") concern that BellSouth will have "converted
13 nearly all of its copper loop plant" is simply misplaced. (See July 1, 2005 Joint
14 CLECs' Response to BellSouth's Motion for Summary Judgment). BellSouth is
15 not trying to interpret the Federal Communications Commission ("FCC") ruling
16 to literally mean that every loop that is capable of being provisioned using HDSL
17 is counted as 24 business lines for purposes of the impairment test (regardless of a
18 loop's current use). (See July 1, 2005, Joint CLECs' Response to BellSouth's
19 Motion for Summary Judgment at page 6.)

20
21 I would note that although BellSouth has not counted each HDSL line on a 24 line
22 equivalent basis, the FCC clearly contemplated that every currently deployed
23 HDSL loop would be counted as a 24 line equivalent, and that BellSouth has
24 opted to undercount business lines in various central offices. Specifically, the
25 FCC said in the Triennial Review Order ("*TRO*") that, "Carriers frequently use a

1 form of DSL service, i.e., High-bit rate DSL (HDSL), both two-wire and four-
2 wire HDSL, as the means for delivering T1 services to customers. We will use
3 DS1 for consistency but note that a DS1 loop and a T1 are equivalent in speed and
4 capacity, both representing the North American standard for a symmetric digital
5 transmission link of 1.544 Mbps.”

6

7 Q. WHAT IS HDSL?

8

9 A. HDSL is fully standardized in T1.418-2002 by the Alliance for
10 Telecommunications Industry Solutions (“ATIS”). HDSL is the preferred
11 technology used to provision a symmetrical 1.544 mega-bits per second (“mbps”)
12 T1 on a normal, shielded, bridged (but not loaded) twisted pair ...¹ BellSouth
13 provisions multiple versions of HDSL technology, specifically, a standard two-
14 wire configuration (referred to as HDSL2), and a standard four-wire configuration
15 (referred to as HDSL4).

16

17 With the symmetrical bit-rate for HDSL established at 1.544Mbps (regardless of
18 which type of HDSL technology is being deployed), this loop has also become
19 known as a “T1.” The term T1 has been accepted by the FCC as an
20 interchangeable term with DS1. Therefore, an HDSL loop is equivalent to a DS1
21 loop, and, in most cases, HDSL is the technology used to provision the DS1
22 service to the customer.

23

24 Since provisioned DS1s are counted as 24 64 kbps-equivalents for purposes of

¹ See Newton’s Telecom Dictionary, 12th Edition, Page 310.

1 establishing the number of business lines, then logically DS1 lines currently
2 deployed utilizing HDSL technology should be counted in the same manner.

3

4 ***Issue 17: Is BellSouth obligated pursuant to the Telecommunications Act of 1996 and***
5 ***FCC Orders to provide line sharing to new CLEC customers after October 1, 2004?***

6

7 Q. WHAT IS BELL SOUTH'S POSITION ON THIS ISSUE?

8

9 A. The FCC has made clear in paragraphs 199, 260, 261, 262, 264, and 265 of the
10 *TRO* that BellSouth is not obligated to provide new line sharing arrangements
11 after October 1, 2004. BellSouth filed a Motion for Summary Judgment on June
12 1, 2005 that fully addresses the legal arguments associated with this issue. On
13 July 20, 2005, the Authority entered an Order resolving this issue. The Authority
14 ruled unanimously in Docket 04-00186 that the FCC removed line sharing as an
15 unbundled network element for new customers after October 2004. The
16 Authority found that BellSouth should continue to provide line sharing to existing
17 customers after October 2004 in accordance with the FCC's transition plan set
18 forth in the *TRO* and 47 C.F.R. Section 51.319. (See pages 6 and 7 of Order.)

19

20 Even though the legal issues have been addressed in BellSouth's Motion for
21 Summary Judgment and in the Authority's July 20 Order referenced above, some
22 factual background may helpful to put this issue in perspective. BellSouth
23 currently has approximately three hundred interconnection agreements that
24 contain line sharing language; however, only nine (9) CLECs have active line
25 sharing arrangements being used to serve end-user customers. Eight (8) of the

1 nine (9) CLECs have placed new orders for new line sharing arrangements after
2 October 1, 2004, and are continuing to pay line sharing rates that are significantly
3 lower than paying for unbundled access to the entire loop, even though the FCC
4 has explained that “we find that allowing competitive LECs unbundled access to
5 the whole loop and to line splitting but not requiring the HFPL [High Frequency
6 Portion of the Loop] to be separately unbundled creates better competitive
7 incentives than the alternatives.” *TRO*, ¶ 260. These CLECs should be ordered to
8 pay the stand-alone loop rate for all line sharing arrangements ordered since
9 October 2004 consistent with the rules set forth by the FCC.

10

11 Q. IS LINE SHARING A NECESSARY COMPONENT FOR CLECs TO
12 CONTINUE TO OFFER BROADBAND SERVICE?

13

14 A. No. As the FCC has recognized, CLECs have numerous options available for
15 serving the broadband needs of their respective end-user customers, when line
16 sharing is not available, that create better competitive incentives. Specifically,
17 CLECs can: (1) utilize line splitting, (2) purchase the entire loop facility, (3)
18 provision the end-user customer with Integrated Services Digital Network
19 (“ISDN”) Digital Subscriber Line (“DSL”) service, (4) partner with a cable
20 broadband provider to provide cable modem broadband service, (5) purchase
21 BellSouth’s tariff wholesale DSL offering, (6) provision the end-user with a
22 dedicated or shared T1, (7) deploy a fixed wireless broadband technology, (8)
23 partner with a satellite broadband provider and finally, (9) build their own loop
24 facilities or lease loop facilities from a third party. Evaluation of the relative
25 merits of each option will depend upon the type and speed of broadband service

1 purchased by the end-user customer, the location of the end-user customer, and
2 the relative costs associated with providing broadband service via each option.

3

4 Moreover, since the FCC's order eliminating Line Sharing, one of the most active
5 line-sharing CLECs -- Covad -- has issued a series of press releases demonstrating
6 its ability to compete without line sharing. For example, Covad has actively been
7 signing line splitting agreements, utilizing the entire loop to offer both broadband
8 and voice, and is even deploying fixed wireless broadband technology; all since
9 the FCC rules eliminating line sharing were issued.

10

11 Exhibit EF-3 provides a sampling of Covad press releases, which are available as
12 a matter of public record on Covad's website
13 (www.covad.com/companyinfo/pressroom). These press releases highlight how
14 innovative Covad has continued to be both before and after line sharing has been
15 eliminated.

16

17 In addition to all of the press releases highlighted in Exhibit EF-3, Covad is
18 aggressively pursuing the deployment of a fixed wireless broadband solution. In
19 the October 1, 2004 issue of America's Network magazine, Covad clearly
20 articulated its plan to provide broadband capability via WiMax technology in
21 2005. Covad stated that it had successfully completed an initial trial in Louisville,
22 Kentucky, and is in the process of rolling out a commercial trial in the San
23 Francisco Bay Area in California. Covad hopes to have a commercially deployed
24 WiMax service offering (that is completely independent of any facilities from the
25 ILEC) by Spring or Summer of 2005. Even though WiMax is relatively new

1 technology, Covad is apparently bullish on wireless broadband, and stated
2 "Should WiMAX not continue forward for whatever reason, Covad's strategies
3 would remain the same."

4

5 All of these examples clearly show that CLECs, and especially Covad, are not
6 impaired without line sharing.

7

8 *Issue 18: If the answer to the foregoing issue is negative, what is the appropriate*
9 *language for transitioning off a CLEC's existing line sharing arrangements?*

10

11 Q. WHAT IS BELL SOUTH'S POSITION ON THIS ISSUE?

12

13 A. Exhibit EF-1, which is attached to my testimony, contains BellSouth's proposed
14 transition language for line sharing arrangements placed in service between
15 October 2, 2003 and October 1, 2004. There is no transition period for line
16 sharing arrangements placed in service after October 1, 2004; rather, as I
17 explained above, the Authority should order CLECs to pay the stand-alone loop
18 rate for such arrangements, and add no new line sharing arrangements going
19 forward. CLECs can serve new customers through a line splitting arrangement or
20 through the use of the stand-alone copper loop, or any of the other methods
21 mentioned above.

22

23 Since only nine (9) CLECs currently have active line sharing circuits, BellSouth's
24 proposed transition language is not included in BellSouth's standard
25 Interconnection Agreement ("ICA"). This language is consistent with the FCC's

1 transition plan established in Paragraph 265 of the *TRO* and in 47 C.F.R. §
2 51.319(a)(1)(i)(B), which details a three-year transition period for line sharing
3 arrangements placed in service between October 2, 2003 through October 1, 2004.
4 Features of the plan include recurring rates rising to 25 percent of the recurring
5 rates for stand-alone copper loops for a particular location during the first year;
6 the recurring charge increasing to 50 percent of the recurring rate for stand-alone
7 copper loop for a particular location during the second year; and, in the last year
8 of the transition period, the recurring charge increasing to 75 percent of recurring
9 rate for a stand-alone loop for a location. See Exhibit EF-2, which is attached to
10 my testimony, for Tennessee rates.

11

12 ***Issue 19: What is the appropriate ICA language to implement BellSouth's obligations***
13 ***with regard to line splitting?***

14

15 Q. PLEASE EXPLAIN YOUR UNDERSTANDING OF BELLSOUTH'S
16 OBLIGATIONS TO PROVIDE LINE SPLITTING.

17

18 A. BellSouth's legal position -- that its line splitting obligations are limited to when a
19 CLEC purchases a stand-alone loop and the CLEC provides its own splitter -- is
20 detailed in BellSouth's Motion for Summary Judgment.

21

22 BellSouth's contract language (Section 3 in Attachment 2) provides for line
23 splitting over an Unbundled Network Element-Loop ("UNE-L"), and for a limited
24 time, with Unbundled Network Element-Platform ("UNE-P") arrangements.

25

1 With respect to line splitting with UNE-L, BellSouth offers the following
2 language:

3

4 3.1 Line Splitting – UNE-L. In the event <<customer_short_name>>
5 provides its own switching or obtains switching from a third party,
6 <<customer_short_name>> may engage in line splitting arrangements
7 with another CLEC using a splitter, provided by
8 <<customer_short_name>>, in a Collocation Space at the central office
9 where the loop terminates into a distribution frame or its equivalent.

10

11 BellSouth's language involves a CLEC purchasing a stand-alone loop (the whole
12 loop) and providing its own splitter in its central office leased collocation space,
13 and then sharing the portion of the loop frequency not in use with a second CLEC.

14

15 Q. ARE CLECS IMPAIRED WITHOUT ACCESS TO BELLSOUTH'S
16 SPLITTERS?

17

18 A. No. Splitter functionality can easily be provided by either an inexpensive stand-
19 alone splitter or by utilizing the integrated splitter built into all Asynchronous
20 Digital Subscriber Line ("ADSL") platforms.

21

22 Q. IS BELLSOUTH OBLIGATED TO PROVIDE THE SPLITTER FOR THE
23 CLEC?

24

25 A. No. A CLEC can provide the splitter in its leased collocation space in
26 BellSouth's central office. Using its own splitter, the CLEC is free to offer voice
27 service on the low frequency portion of the loop, and have another CLEC provide
28 broadband service, such as DSL, over the high frequency portion of the loop (or

1 vice versa).

2
3 ***Issue 20: SUB-LOOP CONCENTRATION: a) What is the appropriate ICA***
4 ***language, if any, to address sub loop feeder or sub loop concentration? b) Do the***
5 ***FCC’s rules for sub loops for multi-unit premises limit CLEC access to copper***
6 ***facilities only or do they also include access to fiber facilities? c) What are the suitable***
7 ***points of access for sub-loops for multi-unit premises?***

8
9 Q. WHAT IS BELLSOUTH’S POSITION ON THIS ISSUE?

10
11 A. First, with respect to part (a) of this issue, BellSouth is not required to unbundle
12 subloop feeder cable or subloop concentration functions, therefore, no ICA
13 language is necessary, or offered. The FCC was very clear in the *TRO* when it
14 stated, “We do not require incumbent LECs to provide access to their fiber feeder
15 loop plant on an unbundled basis as a subloop UNE.”² The FCC also states that it
16 “do[es] not require incumbent LECs to provide unbundled access to their feeder
17 loop plant as stand-alone UNEs, thereby limiting incumbent LEC subloop
18 unbundling obligations to their distribution loop plant.”³ The FCC maintained
19 access to the subloop distribution loop plant because it is the so-called “last mile”
20 where there is a unique copper distribution pair being used to provide service to
21 each customer connection.

22
23 Those sub-loop elements that BellSouth is obligated to provide are detailed in

² TRO at Para. 253.

³ TRO at Para. 254.

1 section 2.8 of Attachment 2, which is attached to Ms. Pamela A. Tipton's Direct
2 Testimony as Exhibit PAT-1.

3

4 Q. PLEASE EXPLAIN THE DIFFERENT TERMS USED TO DISCUSS THE
5 FACILITIES AT ISSUE.

6

7 A. As background, a local loop can be subdivided into its component "subloop"
8 parts: (1) loop feeder facilities; (2) loop concentrator/multiplexer facilities (which
9 BellSouth uses in some cases); and (3) loop distribution facilities. The feeder
10 facilities are usually larger copper or often fiber cables that serve many customers
11 in a particular area and connect to the central office. Loop
12 concentrator/multiplexer facilities translate electronic signals between multiple
13 individual loop distribution customers (where an individual copper pair is being
14 used to provide each customer's individual service) and aggregated loop feeder
15 facilities that carry the combined traffic back to the central office. Loop
16 distribution facilities are often referred to as the "last mile." Loop distribution
17 facilities are those that extend to the demarcation point at a customer's premises.
18 Loop feeder and loop distribution facilities can be connected at cross connection
19 boxes, commonly referred to as cross boxes, or by use of electronic loop
20 concentrator/multiplexer equipment, such as Digital Loop Carrier ("DLC").

21

22 Q. SUBPARTS B AND C OF THIS ISSUE RELATE TO THE POINTS AT
23 WHICH BELL SOUTH IS OBLIGATED TO PROVIDE ACCESS TO THE
24 CLEC. PLEASE COMMENT ON THIS.

25

1 A. The FCC stated clearly that BellSouth must provide access on an unbundled basis
2 to that portion of the copper loop necessary to access the end user's premises, that
3 is, loop distribution. See 47 C.F.R. 51.319(b). At a single family home or stand-
4 alone business location, loop distribution access is provided at the customer's
5 Network Interface Device ("NID").

6
7 In a multi-tenant or multi-unit building environment, loop distribution access is
8 provided to either a NID or an access terminal. The access terminal or NID is the
9 point at which the CLEC can access the unbundled portion of the subloop
10 distribution cable which serves individual units of a multi-tenant building. In all
11 cases, the distribution cable ends at the NID, or at an access terminal. The LEC,
12 the CLEC, or the building owner can own the cable from the access point into the
13 building.

14
15 The access terminal provides the CLEC with the ability to reach the end user
16 without compromising the security or reliability of BellSouth's network. The
17 access terminal can be located in close proximity to a garden terminal, a term
18 used to define a point in BellSouth's network used to serve a multi-unit building.

19
20 *Issue 23: (a) What is the appropriate definition of minimum point of entry*
21 *("MPOE")? (b) What is the appropriate language to implement BellSouth's*
22 *obligation, if any, to offer unbundled access to newly-deployed or 'greenfield' fiber*
23 *loops, including fiber loops deployed to the MPOE of a multiple dwelling unit that is*
24 *predominantly residential, and what, if any, impact does the ownership of the inside*
25 *wiring from the MPOE to each end user have on this obligation?*

1 ***Issue 24: What is the appropriate ICA language to implement BellSouth’s obligation to***
2 ***provide unbundled access to hybrid loops?***

3

4 ***Item 28: What is the appropriate language, if any, to address access to overbuild***
5 ***deployments of fiber to the home and fiber to the curb facilities?***

6

7 Q. WHY IS BELLSOUTH CHOOSING TO ADDRESS THESE THREE (3)
8 ISSUES TOGETHER?

9

10 A. The basis for the FCC requirements for access to loop types drives the FCC’s
11 rules for access to MPOE, hybrid loops, and Fiber to the Home (“FTTH”)/Fiber to
12 the Curb (“FTTC”) loops.

13

14 Q. WHAT IS THE BASIS FOR THE FCC REQUIREMENTS FOR ACCESS TO
15 LOOP TYPES?

16

17 A. The basis for the FCC requirements for access to loop types is to ensure that
18 CLECs continue to have access to currently existing last mile copper facilities, for
19 as long as those facilities continue to exist. The FCC’s definitions and rules for
20 MPOE, hybrid loops, and FTTC/FTTH rules are consistent with this principle.
21 Before discussing the interplay between the various rules, it is critical that the
22 definitions of the terms be used consistently.

23

24 Q. HOW DOES THE FCC DEFINE MPOE?

25

1 A. The FCC has defined MPOE as “either the closest practicable point to where the
2 wiring crosses a property line or the closest practicable point to where the wiring
3 enters a multiunit building or buildings.” 47 C.F.R. § 68.105(b). Consequently,
4 in cases where the property owner has elected the use of MPOE, the MPOE is
5 effectively the demarcation point between the inside wiring facilities at the
6 multiple dwelling unit (“MDU”) and BellSouth’s loop facilities.⁴ The FCC
7 further states in the rules, “The reasonable and nondiscriminatory standard
8 operating practices of the provider of wireline telecommunications services shall
9 determine which shall apply. The provider of wireline telecommunications
10 services is not precluded from establishing reasonable classifications of multiunit
11 premises for purposes of determining which shall apply. Multiunit premises
12 include, but are not limited to, residential, commercial, shopping center and
13 campus situations.”

14
15 Q. DOES BELL SOUTH AGREE WITH THE FCC’S DEFINITION OF MPOE?

16
17 A. Yes. Since these rules became effective on August 13, 1990, they have been the
18 guidelines behind BellSouth’s practices for these types of installations in
19 Tennessee, and BellSouth does not offer a different definition for MPOE.
20

21 Q. WHAT IS MEANT BY “GREENFIELD”?

22
23 A. The term “Greenfield” is used in telecommunications to describe an area of the
24 public switched telephone network outside plant infrastructure that is being built

⁴ In describing this section of the *MDU Order on Reconsideration*, the FCC referred to the section as the “*MDU Demarcation Point*.” *MDU Order on Reconsideration* at 10.

1 to support new residential and commercial construction.

2

3 Q. WHAT IS A HYBRID LOOP?

4

5 A. A hybrid loop is a loop consisting of both copper cable and fiber cable. As is the
6 case with all loops, the definition includes any of the associated electronics, such
7 as DLC systems. This is how the FCC defined a hybrid loop in the *TRO* at
8 footnote 832, and it is the same definition provided in Section 2.1.3 of
9 BellSouth's Attachment 2:

10

11 2.1.3 A hybrid Loop is a local Loop, composed of both fiber
12 optic cable, usually in the feeder plant, and copper twisted
13 wire or cable, usually in the distribution plant.

14

15 Q. PLEASE DISCUSS LOOP FACILITIES THAT BELL SOUTH OWNS IN
16 MPOE SETTINGS.

17

18 A. BellSouth owns loop facilities to multi-tenant and multi-unit buildings. In these
19 cases, BellSouth follows the FCC's rules regarding establishment of MPOE. In
20 today's modern network where fiber optic cable can serve a multi-unit building,
21 BellSouth understands its obligation to provide access to the building even though
22 unbundling is not required in these "greenfield" areas (areas that never had
23 existing copper facilities). Consistent with the FCC's MPOE requirements,
24 BellSouth will make available access to a 64kbps-equivalent voice grade loop at a
25 premises that is only served by fiber facilities. This loop will be capable of
26 supporting services normally available on a voice-capable line.

1 However, the owner of the building can also install his own cable to and within
2 the building. In such a case, the building owner is in control of access,
3 maintenance, and any other issues associated with providing access to the
4 building, including individual units within the building. The building owner can
5 also contract with a preferred provider to serve the units of the building. In that
6 case, the provider is responsible for making access to the individual units
7 available to competing companies, including LECs, CLECs, cable companies, or
8 others.

9

10 Q. PLEASE DEFINE “GREENFIELD FIBER LOOPS” AS USED IN ISSUE 23,
11 SUBPART (B).

12

13 A. Consistent with the definition of “greenfield” above, “greenfield fiber loops” are
14 part of newly-constructed fiber optic cable facilities to residential or business
15 areas (areas that have never had existing copper facilities). BellSouth, per the
16 *TRO* Paragraph 273, is not obligated to “offer unbundled access to newly-
17 deployed or “greenfield” fiber loops.” As a result, Section 2.1.2.1 of Attachment
18 2 states:

19

20 2.1.2.1 In new build (Greenfield) areas, where BellSouth has only
21 deployed FTTH/FTTC facilities, BellSouth is under no
22 obligation to provide Loops. FTTH facilities include fiber
23 loops deployed to the MPOE of a MDU that is predominantly
24 residential regardless of the ownership of the inside wiring
25 from the MPOE to each End User in the MDU.

26 For further explanation, see the discussion on Issue 28 below relating to
27 BellSouth’s obligation with respect to FTTH and FTTC architectures. However,
28 BellSouth believes that the effects of the FCC’s decision on “greenfield” areas are

1 two-fold.

2

3 First, it maintains the incentive for LECs to invest in network using the latest
4 technology to provision advanced services to businesses and residential
5 customers. Second, it paves the way for future services that will be deployed
6 using even greater bandwidth than is common in the local loop today.

7

8 Q. SHOULD BELLSOUTH BE REQUIRED TO PROVIDE ACCESS TO
9 UNBUNDLED HYBRID LOOPS?

10

11 A. No, with one limited exception. In the *TRO* at Paragraph 288, the FCC ruled that
12 hybrid loops should not be unbundled since they are part of the next-generation
13 network. The FCC was concerned that unbundling hybrid loops would stymie the
14 continued deployment of more advanced fiber-based networks. The FCC stated
15 that unbundled next-generation network elements “would blunt the deployment of
16 advanced telecommunications infrastructure by incumbent LECs and the
17 incentive for competitive LECs to invest in their own facilities”⁵ The sole
18 exception is to provide access to the time division multiplexing features of a
19 hybrid loop in an overbuild situation (where continued access to existing copper is
20 required by the FCC). As a result, regarding overbuild situations, BellSouth
21 offers the following language in Paragraph 2.1.3 of Attachment 2:

22

23 BellSouth shall provide <<customer_short_name>> with
24 nondiscriminatory access to the time division multiplexing features,
25 functions and capabilities of such hybrid Loop, on an unbundled basis to

⁵ TRO at Para. 288.

1 establish a complete transmission path between BellSouth's central office
2 and an End User's premises.

3
4 Q. PLEASE SUMMARIZE BELL SOUTH'S POSITION ON ISSUE 28.

5
6 A. BellSouth maintains that the FCC determined in the *TRO* that ILECs have no
7 obligation to unbundle FTTH mass market loops⁶ serving greenfield areas or
8 areas of new construction.⁷ *TRO*, at 275. The FCC expanded this ruling to
9 include FTTC loops.⁸ A FTTC loop is a "fiber transmission facility connecting to
10 copper distribution plant that is not more than 500 feet from the customer's
11 premises."⁹ Thus, the same unbundling framework (including any unbundling
12 relief) established by the FCC in the *TRO* for FTTH loops also applies to FTTC
13 loops. As a result, no language should be added to interconnection agreements,
14 and none is offered by BellSouth.

15
16 This issue is intertwined with Issue 23 (b) above when determining the
17 appropriate language as it applies to MPOE access requirements at MDUs. The
18 FCC determined that FTTH rules in the *TRO* apply to predominately residential
19 MDUs, such as apartment buildings, condominium buildings, cooperatives, and
20 planned unit developments. The FCC further stated that the existence of

⁶A FTTH loop is a "local loop consisting entirely of fiber optic cable (and the attached electronics), whether lit or dark fiber, that connects a customer's premises with a wire center (*i.e.*, from the demarcation point at the customer's premises to the central office)." *TRO* at ¶ 273, n. 802.

⁷The FCC also determined in the *TRO* that ILECs do not have an obligation to unbundle FTTH loops in overbuild situations, except where the ILEC elects to retire existing copper loops in which case the ILEC has to provide unbundled access to a 64 kbps transmission path over the FTTH loop or provide unbundled access to a spare copper loop. *TRO* at ¶ 273, 277.

⁸ *Order on Reconsideration, In the Matter of Review of Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, CC Docket No. 01-338, FCC 04-248 at ¶¶ 1, 9 (Oct. 18, 2004) ("*FTTC Reconsideration Order*").

⁹ *FTTC Reconsideration Order* at ¶ 10.

1 businesses in MDUs does not exempt such buildings from the FTTH unbundling
2 framework established in the *TRO*. For instance, the FCC stated that a “multi-
3 level apartment that houses retail stores such as a dry cleaner and/or a mini-mart
4 on the ground floor is predominately residential, while an office building that
5 contains a floor of residential suites is not.”¹⁰

6
7 The FCC in the *MDU Reconsideration Order* established that FTTH loops
8 include any “fiber loops deployed to the minimum point of entry (‘MPOE’) of
9 predominantly residential MDUs, regardless of the ownership of the inside
10 wiring.” *MDU Order on Reconsideration* at ¶ 10. The FCC has defined MPOE
11 as “either the closest practicable point to where the wiring crosses a property line
12 or the closest practicable point to where the wiring enters a multiunit building or
13 buildings.” 47 C.F.R. § 68.105(b). Consequently, in cases where the MPOE is
14 established, the MPOE is effectively the demarcation point between the inside
15 wire facilities at the MDU and BellSouth’s loop facilities.¹¹ Regardless of
16 whether the ILEC owns or controls the inside wire beyond the demarcation point
17 in an MDU, when the fiber portion of a loop extends to an MDU and that fiber
18 connects to in-building copper cable facilities owned or controlled by an ILEC,
19 the ILEC has no obligation to unbundle the fiber portion of the loop.¹² To avoid
20 any disparate treatment between FTTC loops and FTTH loops, the FCC has held

¹⁰ Order on Reconsideration, In the Matter of Review of Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers, CC Docket No. 01-338, FCC 04-191 at ¶ 1 (Aug. 9, 2004) (“MDU Reconsideration Order”).

¹¹ In describing this section of the *MDU Order on Reconsideration*, the FCC referred to the section as the “MDU Demarcation Point.” *MDU Order on Reconsideration* at 10.

¹² In reaching this decision, the FCC specifically addressed BellSouth request for clarification that “the fiber portion of a loop that extends to a multi-unit building and that connects to in-building copper cable owned or controlled by the LEC, is considered a [FTTH] loop.” *MDU Order on Reconsideration* at ¶ 10.

1 that its rules relating to MDUs applies to both FTTH and FTTC loops. *See FTTC*
2 *Reconsideration Order* at ¶ 14.

3

4 Based on these facts, it is clear that BellSouth has no obligation to unbundle or
5 provide access to FTTH or FTTC, other than as noted above.

6

7 As a result, BellSouth's language with respect to FTTC and MDU's in Overbuild
8 areas is clearly provided in Section 2.1.2.2:

9 FTTH/FTTC overbuild situations where BellSouth also has
10 copper Loops, BellSouth will make those copper Loops available
11 to <<customer_short_name>> on an unbundled basis, until such
12 time as BellSouth chooses to retire those copper Loops using the
13 FCC's network disclosure requirements. In these cases,
14 BellSouth will offer a 64 kilobits per second (kbps) second voice
15 grade channel over its FTTH/FTTC facilities.

16

17 ***Issue 25: Under the FCC's definition of a loop found in 47 C.F.R. §51.319(a), is a***
18 ***mobile switching center or cell site an "end user customer's premises"?***

19

20 Q. WHAT IS BELL SOUTH'S POSITION ON THIS ISSUE?

21

22 A. The FCC ruled in both the *TRO* and Triennial Review Remand Order ("*TRRO*")
23 that cell sites and mobile switching centers are not included in its definition of the
24 term "end user premises." The FCC said in the *TRO* at Paragraph 366 that cell
25 sites or base stations should be considered part of the transmission facilities that
26 exist outside of the incumbent LEC's local network. BellSouth does not believe
27 that an administrative line used by the site, or lines used by other customers who
28 happen to occupy the same building as the cell site, fall within the issue the FCC

1 was addressing in this instance, as the Joint CLECs claim in their July 1, 2005,
2 Response to BellSouth's Motion for Summary Judgment. In the case of the
3 administrative line, the site owner could be the actual consumer of the service.
4 The administrative line is not used as an intermediary point for facilities that
5 ultimately provide service to an end user (the end user being a customer of the site
6 owner). With respect to other customers located in the same building or site as
7 the cell tower, BellSouth is not attempting to reclassify its unbundling
8 requirements to those customers who are clearly consuming the services as end-
9 users.

10

11 Q. PLEASE EXPLAIN THE DEFINITION OF A LOOP AS REFERENCED IN 47
12 CFR 51.319(A).

13

14 A. In 47 CFR 51.319 (a), a loop is defined as "a transmission facility between a
15 distribution frame (or its equivalent) in an incumbent LEC central office and the
16 loop demarcation point at an end-user customer premises. This element includes
17 all features, functions, and capabilities of such transmission facility, including the
18 network interface device. It also includes all electronics, optronics, and
19 intermediate devices (including repeaters and load coils) used to establish the
20 transmission path to the end-user customer premises as well as any inside wire
21 owned or controlled by the incumbent LEC that is part of that transmission path."

22

23 Recognizing the definition of a loop, BellSouth's proposed contract language at
24 Section 2.1 provides that:

25

1 The local loop Network Element is defined as a transmission facility that
2 BellSouth provides pursuant to this Attachment between a distribution
3 frame (or its equivalent) in BellSouth's central office and the loop
4 demarcation point at an End User premises (Loop). Facilities that do not
5 terminate at a demarcation point at an End User premises, including, by
6 way of example, but not limited to, facilities that terminate to another
7 carrier's switch or premises, a cell site, Mobile Switching Center or base
8 station, do not constitute local Loops.

9
10 *Issue 26: What is the appropriate ICA language to implement BellSouth's obligation to*
11 *provide routine network modifications?*

12
13 Q. WHAT IS BELLSOUTH'S DEFINITION OF ROUTINE NETWORK
14 MODIFICATION ("RNM")?

15
16 A. BellSouth subscribes to the FCC's definition of routine network modification and
17 specifically offers the following language for Routine Network Modifications in
18 Paragraph 1.10:

19
20 BellSouth will perform Routine Network Modifications (RNM) in
21 accordance with FCC 47 C.F.R. § 51.319 (a)(7) and (e)(4) for Loops and
22 Dedicated Transport provided under this Attachment.

23
24 The FCC clearly defines a "routine network modification" in Paragraph 632 of the
25 *TRO*. Specifically, the *TRO* states, "By 'routine network modifications' we mean
26 that incumbent LECs must perform those activities that incumbent LECs regularly
27 undertake for their own customers."

28
29 Q. WHAT IS BELLSOUTH'S POSITION ON THIS ISSUE?

1 A. BellSouth is not obligated to perform functions under the “routine network
2 modifications” umbrella that it does not normally perform for its own customers.
3 BellSouth will perform routine network modifications, such as line conditioning,
4 that BellSouth regularly undertakes for its own customers (including xDSL
5 customers). In limited situations, BellSouth will also perform additional line
6 conditioning functions, pursuant to agreements with CLECs in industry
7 collaboratives. However, functions performed under collaborative agreements are
8 not routine network modifications, and are, therefore, not required by the FCC.
9 Thus, BellSouth is operating according to the FCC’s ruling in the *TRO* on this
10 issue. In some situations, as discussed here, BellSouth exceeds the FCC’s
11 requirements.

12
13 Q. WHAT TECHNICAL OR OPERATIONAL PURPOSES DO ROUTINE
14 NETWORK MODIFICATIONS SERVE?

15
16 A. Routine network modifications are industry-recognized standard changes to
17 outside plant infrastructure in order to provide standard services. For example, in
18 order for BellSouth (or a CLEC) to offer DS1 service to a customer over 20,000
19 feet from a central office, the industry standard calls for signal repeaters to be
20 installed. BellSouth routinely places repeaters to provision DS1 service for its
21 customers, and also installs these same repeaters to provision the same DS1
22 service for CLEC customers on BellSouth loops.

23
24 Alternatively, non-standard changes to loops are not routine network
25 modifications. For example, industry standards require that load coils be placed

1 on copper loops over 18,000 feet long to provide sufficient quality voice service
2 in the low frequency portion of the loop. Removal of load coils would create a
3 non-standard loop and inhibit the ability to use the loop for voice services until
4 the load coils are replaced sometime in the future. Since load coil removal on a
5 loop over 18,000 feet long is a non-standard request, and extremely rare, it is not
6 routinely performed. In fact, BellSouth received only two (2) such requests from
7 all CLECs in 2004. Furthermore, BellSouth does not remove load coils on loops
8 over 18,000 feet long to serve its own customers. By definition, this line
9 conditioning procedure is not a routine network modification, and therefore, is not
10 required by the FCC.

11
12 Q. IS LINE CONDITIONING A ROUTINE NETWORK MODIFICATION?

13
14 A. Yes. The FCC repeatedly refers to the relationship between line conditioning and
15 routine network modifications in the *TRO*. In *TRO* Paragraph 250, the FCC
16 states, “Line conditioning constitutes a form of Routine Network Modification
17” Later, in Paragraph 643, the FCC states. “Line Conditioning is properly
18 seen as a Routine Network Modification” In both cases, the phrase
19 “constitutes a form” and the term “properly” are defined as a “subset.” In other
20 words, the FCC clearly identifies BellSouth’s line conditioning obligations as a
21 subset of BellSouth’s routine network modification obligations. As a result,
22 BellSouth offers the following language in paragraph 2.5.1:

23
24 Line Conditioning is defined as routine network modification that
25 BellSouth regularly undertakes to provide xDSL services to its own
26 customers.

1 Q. WHAT TYPES OF LINE CONDITIONING HAVE CLECS HISTORICALLY
2 REQUESTED THAT ARE NOT ROUTINE NETWORK MODIFICATIONS?

3
4 A. Prior to the FCC's clarification of BellSouth's line conditioning obligation as a
5 subset of BellSouth routine network modifications obligation, BellSouth had
6 removed load coils on loops greater than 18,000 feet long (albeit rare), and
7 removed bridged taps at the request of CLECs (also uncommon). Since
8 BellSouth does not perform either type of line conditioning while provisioning
9 xDSL service to its own customers, and they are not routine, BellSouth is not
10 obligated to perform this function for CLECs.

11
12 As further proof that removal of load coils and bridged taps are not routine,
13 BellSouth (in addition to only two (2) load coil removal requests on loops over
14 18,000 feet from CLECs in 2004) received only 55 requests from CLECs for
15 removal of bridged taps of any length in 2004.

16
17 *Item 27: What is the appropriate process for establishing a rate, if any, to allow for the*
18 *cost of routine network modification that is not already recovered in Authority -*
19 *approved recurring or non-recurring rates? What is the appropriate language, if any,*
20 *to incorporate into the ICAs?*

21
22 Q. WHAT IS BELL SOUTH'S POSITION ON THIS ISSUE?

23
24 A. BellSouth believes that this issue encompasses a basic disagreement between the
25 parties on what functions constitute a routine network modification, since the

1 source of the obligation leads to the process for establishing a rate. If BellSouth is
2 obligated to perform a routine network modification, then the rate for that activity
3 should be based on Total Element Long Range Incremental Cost ("TELRIC"). If
4 BellSouth is not obligated to perform a particular function (such as removal of
5 load coils on loops longer than 18,000 feet or removal of bridged taps), then the
6 rate should be that contained in the applicable commercial agreement between
7 BellSouth and the CLEC, or applicable tariff where appropriate. BellSouth's
8 language with respect to rates for RNM's is as follows:

9

10 If BellSouth has anticipated such RNM and performs them during normal
11 operations and has recovered the costs for performing such modifications
12 through the rates set forth in Exhibit A, then BellSouth shall perform such
13 RNM at no additional charge. RNM shall be performed within the
14 intervals established for the Network Element and subject to the
15 performance measurements and associated remedies set forth in
16 Attachment 9 of this Agreement to the extent such RNM were anticipated
17 in the setting of such intervals. If BellSouth has not anticipated a
18 requested network modification as being a RNM and has not recovered the
19 costs of such RNM in the rates set forth in Exhibit A, then such request
20 will be handled as a project on an individual case basis. BellSouth will
21 provide a price quote for the request and, upon receipt of payment from
22 <<customer_short_name>>, BellSouth shall perform the RNM.

23

24 Q. WHAT IS THE REAL ISSUE HERE?

25

26 A. CLECs are contesting the requirement by the FCC that BellSouth perform routine
27 network modifications for the CLEC's customer only if BellSouth would
28 normally perform that activity in the course of providing the same service to a
29 BellSouth retail customer. The CLECs have, in other proceedings, pressured state
30 Commissions to order BellSouth to provide, for example, removal of load coils on
31 loops greater than 18,000 feet in length for xDSL customers. BellSouth does not

1 perform that non-standard, non-routine function for its own xDSL customers, and
2 therefore should not be obligated to perform that same function for CLECs' xDSL
3 customers.

4

5 BellSouth's response to the CLECs has been consistent with the FCC's language
6 provided in the *TRO*, and BellSouth has offered CLECs alternative solutions. For
7 example, a CLEC may request an activity be performed (such as line conditioning
8 on a loop longer than 18,000 feet) even though that activity is not required by the
9 FCC. As such, special construction is required to make that loop non-standard,
10 and convert it back to industry and BellSouth standards when the CLEC has no
11 further use for it. These costs are appropriately recovered under BellSouth's FCC
12 No. 1 tariff. No interconnection agreement language, or rate, would be
13 appropriate since there is no FCC requirement to provide that function.

14

15 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

16

17 A. Yes.

18

19

20

21

22

23

24

25

1

2

3

4

5

6 593640

3 Line Sharing

- 3.1 **General.** Line Sharing is defined as the process by which <<customer_short_name>> provides digital subscriber line service (“xDSL”) over the same copper Loop that BellSouth uses to provide retail voice service, with BellSouth using the low frequency portion of the Loop and <<customer_short_name>> using the high frequency spectrum (as defined below) of the Loop.
- 3.1.1 Line Sharing arrangements in service as of October 1, 2003 under a prior Interconnection Agreement between Bellsouth and <<customer_short_name>>, will remain in effect until the End User discontinues or moves xDSL service with <<customer_short_name>>. Arrangements pursuant to this Section will be billed at the rates set forth in Exhibit A.
- 3.1.2 No new line sharing arrangements may be ordered. For Line Sharing arrangements placed in service between October 2, 2003, and October 1, 2004; on or after October 2, 2004 (whether under this Agreement only, or under this Agreement and a prior Agreement), the rates will be as set forth in Exhibit A.
- 3.1.3 Any Line Sharing arrangements placed in service between October 2, 2003 and October 1, 2004; on or after October 2, 2004; and not otherwise terminated, shall terminate on October 2, 2006.
- 3.1.4 The High Frequency Spectrum is defined as the frequency range above the voiceband on a copper Loop facility carrying analog circuit-switched voiceband transmissions. Access to the High Frequency Spectrum is intended to allow <<customer_short_name>> the ability to provide xDSL data services to the End User for which BellSouth provides voice services. The High Frequency Spectrum shall be available for any version of xDSL complying with Spectrum Management Class 5 of ANSI T1.417, American National Standard for Telecommunications, Spectrum Management for Loop Transmission Systems. BellSouth will continue to have access to the low frequency portion of the Loop spectrum (from 300 Hertz to at least 3000 Hertz, and potentially up to 3400 Hertz, depending on equipment and facilities) for the purposes of providing voice service. <<customer_short_name>> shall only use xDSL technology that is within the PSD mask for Spectrum Management Class 5 as found in the above-mentioned document.
- 3.1.5 Access to the High Frequency Spectrum requires an unloaded, 2-wire copper Loop. An unloaded Loop is a copper Loop with no load coils, low-pass filters, range extenders, DAMLs, or similar devices and minimal bridged taps consistent with ANSI T1.413 and T1.601.

- 3.1.6 BellSouth will provide Loop Modification to <<customer_short_name>> on an existing Loop for Line Sharing in accordance with procedures as specified in Section 2 of this Attachment. BellSouth is not required to modify a Loop for access to the High Frequency spectrum if modification of that Loop significantly degrades BellSouth's voice service. If <<customer_short_name>> requests that BellSouth modify a Loop and such modification significantly degrades the voice services on the Loop, <<customer_short_name>> shall pay for the Loop to be restored to its original state.
- 3.1.7 Line Sharing shall only be available on loops on which BellSouth is also providing, and continues to provide, analog voice service directly to the End User. In the event the End User terminates its BellSouth provided voice service for any reason, or in the event BellSouth disconnects the End User's voice service pursuant to its tariffs or applicable law, and <<customer_short_name>> desires to continue providing xDSL service on such Loop, <<customer_short_name>> or the new voice provider, or both, shall be required to purchase a full stand-alone Loop. In those cases in which BellSouth no longer provides voice service to the End User and <<customer_short_name>> purchases the full stand-alone Loop, <<customer_short_name>> may elect the type of Loop it will purchase. <<customer_short_name>> will pay the appropriate recurring and nonrecurring rates for such Loop as set forth in Exhibit A to this Attachment. In the event <<customer_short_name>> purchases a voice grade Loop, <<customer_short_name>> acknowledges that such Loop may not remain xDSL compatible.
- 3.1.8 In the event the End User terminates its BellSouth provided voice service, and <<customer_short_name>> requests BellSouth to convert the Line Sharing arrangement to a Line Splitting arrangement (see below), BellSouth will discontinue billing <<customer_short_name>> for the High Frequency Spectrum and begin billing the voice CLEC. BellSouth will continue to bill the Data LEC for all associated splitter charges if the Data LEC continues to use a BellSouth splitter.
- 3.1.9 Only one CLEC shall be permitted access to the High Frequency Spectrum of any particular Loop.
- 3.2 Once BellSouth has placed cross-connects on behalf of <<customer_short_name>> to provide <<customer_short_name>> access to the High Frequency Spectrum and chooses to rearrange its splitter or CLEC pairs, <<customer_short_name>> may order the rearrangement of its splitter or cable pairs via "Subsequent Activity". Subsequent Activity is any rearrangement of <<customer_short_name>>'s cable pairs or splitter ports after BellSouth has placed cross-connection to provide

<<customer_short_name>> access to the High Frequency Spectrum. BellSouth shall bill and <<customer_short_name>> shall pay the Subsequent Activity charges as set forth in Exhibit A of this Attachment.

- 3.3 BellSouth's Local Ordering Handbook (LOH) will provide <<customer_short_name>> the LSR format to be used when ordering disconnections of the High Frequency Spectrum or Subsequent Activity.
- 3.4 **Maintenance and Repair – Line Sharing.** <<customer_short_name>> shall have access for repair and maintenance purposes to any Loop for which it has access to the High Frequency Spectrum. <<customer_short_name>> may test from the collocation space, the Termination Point, or the NID.
 - 3.4.1 BellSouth will be responsible for repairing voice services and the physical line between the NID at the End User's premises and the Termination Point. <<customer_short_name>> will be responsible for repairing its data services. Each Party will be responsible for maintaining its own equipment.
 - 3.4.2 <<customer_short_name>> shall inform its End Users to direct data problems to <<customer_short_name>>, unless both voice and data services are impaired, in which event <<customer_short_name>> should direct the End Users to contact BellSouth.
 - 3.4.3 Once a Party has isolated a trouble to the other Party's portion of the Loop, the Party isolating the trouble shall notify the End User that the trouble is on the other Party's portion of the Loop.

UNBUNDLED NETWORK ELEMENTS - Tennessee												Attachment: 2 Exh. C					
CATEGORY	RATE ELEMENTS			Interim	Zone	BCS	USOC	RATES(\$)				Svc Order Submitted Elec per LSR	Svc Order Submitted Manually per LSR	Incremental Charge - Manual Svc Order vs. Electronic-1st	Incremental Charge - Manual Svc Order vs. Electronic-Add'l	Incremental Charge - Manual Svc Order vs. Electronic-Disc 1st	Incremental Charge - Manual Svc Order vs. Electronic-Disc Add'l
							Rec	Nonrecurring		Nonrecurring Disconnect		OSS Rates(\$)					
								First	Add'l	First	Add'l	SOMEc	SOMAN	SOMAN	SOMAN	SOMAN	SOMAN
LINE SHARING																	
	NOTE 1: The Line Sharing monthly recurring rates for all installations completed from October 02, 2003 through midnight October 01, 2004 and on or after October 02, 2004 shall be billed as follows:																
	NOTE 1: 10/02/2003 – 10/01/2004: 25% of the rate for an unbundled copper loop non-designed ("UCLND")																
	NOTE 1: 10/02/2004 – 10/01/2005: 50% of the rate for UCLND																
	NOTE 1: 10/02/2005 – 10/01/2006: 75% of the rate for UCLND																
	NOTE 1: Above will apply to USOCs: ULSDT and ULSCt																
	**NOTE 2: The Line Sharing monthly recurring rates with USOCs ULSDC and ULSCC applies only to circuits installed and inservice on or before October 1, 2003																
LINE SHARING																	
SPLITTERS-CENTRAL OFFICE BASED																	
		Line Sharing Splitter, per System 96 Line Capacity			ULS	ULSDA	100.00	150.00	0.00	0.00	0.00			20.35	10.54	13.32	13.32
		Line Sharing Splitter, per System 24 Line Capacity			ULS	ULSDB	25.00	150.00	0.00	0.00	0.00			20.35	10.54	13.32	13.32
		Line Sharing-DLEC Owned Splitter in CO-CFA activation-deactivation (per LSOD)			ULS	ULSDG		163.06	0.00	92.71	0.00			20.35	10.54	13.32	13.32
END USER ORDERING-CENTRAL OFFICE BASED LINE SHARING																	
		Line Sharing - per Line Activation (BST Owned splitter) - OBSOLETE see **NOTE 2			ULS	ULSDC	0.61	40.00	31.39	0.00	0.00			20.35	10.54	13.32	13.32
		Line Share Service, TRO per line activation, BST owned splitter - Central Office Located (50% of UCLND) - please see NOTE 1 (E:10/2/2004)			ULS	ULSDT	5.87	40.00	31.39	0.00	0.00						
		Line Share Service, TRO per line activation, BST owned splitter - Central Office Located (75% of UCLND) - please see NOTE 1 (E:10/2/2005)			ULS	ULSDT	8.81	40.00	31.39	0.00	0.00						
		Line Sharing - per Subsequent Activity per Line Rearrangement(BST Owned Splitter)			ULS	ULSDS		30.00	15.00					20.35	10.54	13.32	13.32
		Line Sharing - per Subsequent Activity per Line Rearrangement(DLEC Owned Splitter)			ULS	ULSCS		30.00	15.00					20.35	10.54	13.32	13.32
		Line Sharing - per Line Activation (DLEC owned Splitter) - OBSOLETE see **NOTE 2			ULS	ULSCC	0.61	47.44	19.31	0.00	0.00			20.35	10.54	13.32	13.32
		Line Share Service, TRO per line activation, CLEC owned splitter - Central Office Located (50% of UCLND) - please see NOTE 1 (E:10/2/2004)			ULS	ULSCT	5.87	47.44	19.31	0.00	0.00						
		Line Share Service, TRO per line activation, CLEC owned splitter - Central Office Located (75% of UCLND) - please see NOTE 1 (E:10/2/2005)			ULS	ULSCT	8.81	47.44	19.31	0.00	0.00						

Sampling of Covad Press Releases

June 28, 2005

Covad and Samsung Announce Upgrade to Covad Nationwide Network that Enables Local & Long Distance Service, Internet Access and Video over DSL

June 6, 2005

Earthlink and Covad Announce Market Trial of Innovative Bundle of Phone Services and High-Speed Internet

March 28, 2005

Covad Dedicated-Loop ADSL Offers Alternative to Bell Customers Who Want "Naked DSL"

January 13, 2005

Covad to Conduct Trials of Next-Generation DSLAM Technology Supporting New Competitive Choices for Local and Long Distance Service

December 9, 2004

Covad Completes Nationwide Rollout of Business-Class VoIP

August 31, 2004

Covad Launches Voice over IP Services Based on Cisco Equipment that Provides Enhanced Performance to Customers Nationwide

July 27, 2004

Lightyear Network Solutions Selects Covad For Its Bundled Voice and Data Service

July 6, 2004

Covad Launches Dedicated-Loop ADSL for Consumers and Small Businesses Nationwide

July 6, 2004

Met Tel Selects Covad DSL For Its Local and Long Distance Voice and Data Bundles

June 17, 2004

Covad Communications Announces Strategic Relationship with WiTel Communications

May 11, 2004

Covad Partners with AT&T to Offer Bundled DSL and Voice Services in California

April 6, 2004

Covad Partners with AT&T to Offer Bundled DSL and Voice Services in 11 New States

April 5, 2004

Covad Begins Receiving Broadband Orders from ACN As Part of Their Bundled Voice and Broadband Services

Feb. 25, 2004

Covad Partners with AT&T to Offer Bundled DSL and Voice Services in Three New States

Feb. 9, 2004

Covad Announces Voice Over Internet Protocol (VoIP) Deployment Plans

Jan. 9, 2004

Covad Partners with ACN to Address Growing Demand for Bundled Local/Long Distance Voice and Data Services

Jan. 8, 2004

Covad Communications Announces Strategic Relationship with Broadwing

Dec. 17, 2003

Covad Named National DSL Provider For Global Crossing Frame Relay, IP-VPN, Dedicated Internet Access And VoIP Services

Dec. 11, 2003

Covad Partners with AT&T to Offer Bundled DSL and Voice Services in Three Additional States

Nov. 18, 2003

Covad Partners with AT&T to Offer Bundled DSL and Voice Services in Three More States

Sept 23, 2003

Netifice Enhances Resale Agreement with Covad to Deliver Business Class Broadband IP VPN Solutions

Sept 11, 2003

Covad Partners with AT&T to Offer Bundled DSL and Voice Services in Four More States

Sept 2, 2003

Covad Extends Partnership with MCI

Aug 28, 2003

Vartec and Excel Select Covad DSL for their Local/Long Distance Voice and Data Bundles

Aug 7, 2003

Covad and Z-Tel Extend Their Partnership

July 30, 2003

Covad Provides DSL Service for AT&T's New High-Speed Internet Service Offer

July 15, 2003

Z-Tel Strengthens Its Business Services Focus, Launches Nationwide Managed Voice and Data Solutions for Companies Large and Small

June 17, 2003

New Edge Networks Expands Agreement with Covad; Offers National Frame Relay over DSL at Savings up to 50%

June 3, 2003

Covad Improves T1 TeleXtendSM for Small and medium Sized Businesses

May 15, 2003

New Agreement With Covad Allows Z-Tel to Deliver Broadband Services to Its Telecom Customers